



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,313	12/02/2003	Ivan V. Mendenhall	AAI-14304	3115

45483 7590 02/07/2007
AUTOLIV ASP, INC
Attn: Sally J. Brown ESQ
3350 Airport Rd
OGDEN, UT 84405

EXAMINER

GELLNER, JEFFREY L

ART UNIT	PAPER NUMBER
----------	--------------

3643

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/726,313

Applicant(s)

MENDENHALL ET AL.

Examiner

Jeffrey L. Gellner

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 7, 8, 16, 17 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-15, 18-24 and 26-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 3643

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of the additional fuel of boron in the reply filed on 14 November 2-006 is acknowledged. The traversal is on the ground(s) that there is no statement of serious burden on the Examiner. This is not found persuasive because there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

The requirement is deemed proper and is therefore made FINAL.

Further, claims 5, 6, and 22 are rejoined because they are considered to be drawn to the additional fuel being boron. Claims 7 and 8 remain withdrawn because they are drawn to an organic fuel or organic additional fuel, both non-elected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 11-14, 18, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (US 5,883,330) in view of Taylor et al. (US 6,083,331; document AI on page 1 of Applicants' 1449 received 2 Dec. '03).

Art Unit: 3643

As to claim 1, 3, 4, 11, and 12, Yoshida discloses a an ignition composition (abstract) effective to form an igniter substance have a surface area (abstract), the ignition composition including a fuel (col. 4 lines 10-21) and oxidizer (“potassium nitrate” of col. 4 lines 37-43) further comprising a polymeric binder (col. 5 lines 41-48) and a blowing agent (“aminoguanidine bicarbonate” of col. 4 lines 1-4) effective, upon decomposition (Yoshida’s composition capable of decomposition), to increase the surface area of the igniter substance; wherein the igniter composition, upon being heated to a predetermined temperature, forms an igniter substance which is porous and capable of adhering to an associated inflator apparatus surface (Yoshida’s composition of either RDX or HMX and aminoguanidine bicarbonate capable of being made porous and adhering; see col. 4 lines 30-31). Not disclosed is the fuel being a metal fuel an alloy of Al and Mg. Taylor et al., however, discloses a metal fuel of Al, Mg, or an alloy of Al and Mg with an organic fuel (col. 4 lines 12-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Yoshida by adding a metal fuel of an alloy of Al and Mg so as to adjust burn rate.

As to claim 2, the limitations of claim 1 are disclosed as described above. Not disclosed is the metal fuel being a powdered metal fuel. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Yoshida as modified by Taylor et al. by using a powdered metal fuel so as to increase the surface area of the metal fuel so as to modify burn rate.

As to claims 5 and 6, the limitations of claim 1 are disclosed as described above. Not disclosed is an additional fuel of boron. Taylor et al. further discloses use of boron with an alloy of Al and Mg (from “boron . . . alloys of aluminum and magnesium and combinations thereof”).

Art Unit: 3643

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Yoshida as modified by Taylor et al. by adding boron so as to modify burn rate.

As to claim 13, Yoshida as modified by Taylor et al. further disclose the blowing agent with a composition of between 130 and 170 C (inherent).

As to claim 14, Yoshida as modified by Taylor et al. further disclose the surface a surface of gas generant tablet (Yoshida at col. 7 lines 19-25 in that can be made into a tablet).

As to claims 18, 20, 21, and 26, Yoshida discloses a an ignition composition (abstract) effective to form an igniter substance have a surface area (abstract), the ignition composition including a fuel (col. 4 lines 10-21) and oxidizer ("potassium nitrate" of col. 4 lines 37-43) further comprising a polymeric binder (col. 5 lines 41-48) and a blowing agent ("aminoguanidine bicarbonate" of col. 4 lines 1-4) effective, upon decomposition (Yoskida's composition capable of decomposition), to increase the surface area of the igniter substance; wherein the igniter composition, upon being heated to a predetermined temperature, forms an igniter substance which is porous and capable of adhering to an associated inflator apparatus surface (Yoskida's composition of either RDX or HMX and aminoguanidine bicarbonate capable of being made porous and adhering; see col. 4 lines 30-31). Not disclosed is the fuel being a metal fuel an alloy of Al and Mg; and, particular percentages of the constituents making up the composition. Taylor et al., however, discloses a metal fuel of Al, Mg, or an alloy of Al and Mg with an organic fuel (col. 4 lines 12-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Yoshida by adding a metal fuel of Al and Mg so as to

Art Unit: 3643

adjust burn rate and further to have a composition with the percentages of the constituents as disclosed in claim 18 depending upon use of the composition.

As to claims 19 and 22, the limitations of claim 18 are disclosed as described above. Not disclosed is an additional fuel of boron. Taylor et al. further discloses use of boron with an alloy of Al and Mg (from "boron . . . alloys of aluminum and magnesium and combinations thereof"). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Yoshida as modified by Taylor et al. by adding boron so as to modify burn rate.

As to claim 23, Yoshida as modified by Taylor et al. further disclose the oxidizer being potassium nitrate (col. 4 lines 37-42 of Yoshida).

As to claims 27-29, Yoshida as modified by Taylor et al. further discloses bentonite as a desensitizing agent (Yoshida at col. 6 lines 25-29) at up to about 10 composition weight percent (Yoshida at col. 6 lines 30-35).

Claims 9, 10, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (US 5,883,330) Taylor et al. (US 6,083,331; document AI on page 1 of Applicants' 1449 received 2 Dec. '03) in further view of Thompson et al. (US 5,608,182).

As to claims 9 and 10, the limitations of claim 1 are disclosed as described above. Not disclosed is the binder being hydroxypropyl cellulose. Thompson et al., however, discloses a composition with hydroxypropyl cellulose (col. 3 lines 6-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Yoshida as modified by Taylor et al. by using hydroxypropyl cellulose as the binder as disclosed

Art Unit: 3643

by Thompson et al. so as improve the physical properties of the composition if, or when, formed into a pellet.

As to claim 24, the limitations of claim 18 are disclosed as described above. Not disclosed is the binder being hydroxypropyl cellulose. Thompson et al., however, discloses a composition with hydroxypropyl cellulose (col. 3 lines 6-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Yoshida as modified by Taylor by using hydroxypropyl cellulose as the binder as disclosed by Thompson et al. so as improve the physical properties of the composition if, or when, formed into a pellet.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (US 5,883,330) Taylor et al. (US 6,083,331; document AI on page 1 of Applicants' 1449 received 2 Dec. '03) in further view of Wheatley et al. (US 6,334,961 B1).

As to claim 15, the limitations of claim 1 are disclosed as described above. Not disclosed is the gas generant material being used as an ignition composition, the ignition composition adheringly coating a gas generant material upon heating to a predetermined temperature. Wheatley et al., however, discloses the concept that a gas generant material can be used as an ignition material (col. 2 lines 5-12; col. 3 lines 38-42). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of claim 1 by using as an ignition composition as disclosed by Wheatley et al. so as to have more use for the composition and to adheringly coat the composition to a gas generant material upon heating to a

Art Unit: 3643

predetermined temperature as a well known means to prepare the combined materials for use in an safety restraint system.

Response to Arguments

Applicant's arguments filed 24 July 2006 have been fully considered but they are not persuasive. Applicants' arguments are: (1) Yoshida discloses a gas generating composition and not an ignition composition of the instant invention (Remarks bottom of page 13 to bottom of page 14); (2) prior art does not disclose a desensitizing agent of bentonite (Remarks top of page 15); (3) Yoshida does not disclose statements as to the porosity or adherability of aminoguanidine (Remarks bottom of page 15); (4) Nielson discloses a ignition composition but Yoshida discloses a gas generating composition so the combination is not proper (Remarks page 16-18); and, (5) since Trapp is a liquid explosive there is no motivation to combine with Yoshida, a solid composition (Remarks pages 20-21).

As to argument (1), Examiner considers the preamble of Applicants' claims to have no patentable weight because it recites intended use and not structural limitations (see MPEP 2111.02 at I. and II.). Also, Wheatley et al. discloses that a composition can be used for both ignition and gas generation as stated above.

As to argument (2), Yoshida discloses a desensitizing agent of bentonite at col. 6 lines 24-34.

As to argument (3), Examiner considers the porosity and adherability of Yoshida's composition to be inherent because his composition is similar to Applicants and it is settled law

Art Unit: 3643

that if a composition is physically the same it will have the same properties (see MPEP 2112.02 II.).

As to argument (4), Examiner has used different prior art in the rejection that makes the combination proper.

As to argument (5), Examiner has used different prior art in the rejection that makes the combination proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Gellner whose telephone number is 571.272.6887. The examiner can normally be reached on Monday-Friday, 8:30-4:00, alternate.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 571.272.6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/726,313

Page 9

Art Unit: 3643

A handwritten signature in black ink, appearing to read 'Jeffrey L. Gellner', written in a cursive style.

Jeffrey L. Gellner
Primary Examiner
Art Unit 3643